ABSTRACT

Dendron ligands or other branched ligands with cross-linkable groups were coordinated to colloidal inorganic nanoparticles, including nanocrystals, and substantially globally cross-linked through different strategies, such as ring-closing metathesis (RCM), dendrimer-bridging methods, and the like. This global cross-linking reaction sealed each nanocrystal within a dendron box to yield box-nanocrystals which showed dramatically enhanced stability against chemical, photochemical and thermal treatments in comparison to the non-cross-linked dendron-nanocrystals. Empty dendron boxes possessing a very narrow size distribution were formed by the dissolution of the inorganic nanocrystals contained therein upon acid or other etching treatments.

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